

CLAIMS

1. A method for terminating a call request to a mobile unit being served by an interworking Mobile Switching Center (iMSC) in a communication system comprising a circuit-switched domain, and an IP Multimedia Subsystem (IMS), the method comprising:
- receiving a call intended for the mobile unit at the IMS;
- forwarding by the IMS the call intended for the mobile unit to the iMSC via SIP on an Mx interface, the Mx interface connecting the iMSC to a Call State Control Function (CSCF) in the IMS;
- sending by an S-CSCF located in the IMS SIP messages; and
- performing by the iMSC interworking between SIP call control procedures on the Mx interface and call control procedures towards the mobile unit.

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2. A method for terminating a call request in accordance with claim 1, wherein the step of receiving a call intended for the mobile unit at the IMS comprises receiving a call request from a Public Switched Telephone Network (PSTN).

3. A method for terminating a call request in accordance with claim 2, wherein the IMS receives the call request from the PSTN via a Media Gateway Control Function (MGCF), an Interworking Call State Control Function (I-CSCF), and a Serving Call State Control Function (S-CSCF).

4. A method for terminating a call request in accordance with claim 1, wherein the step of receiving a call intended for the mobile unit at the IMS comprises receiving a call request from a second IMS.

5. A method for terminating a call request in accordance with claim 4, wherein the IMS receives the call request from the second IMS via an I-CSCF and an S-CSCF.

6. A method for terminating a call request in accordance with claim 1, wherein the step of receiving a call intended for the mobile unit at the IMS comprises receiving a call request from a Public Land Mobile Network (PLMN).

7. A method for terminating a call request in accordance with claim 6, wherein the IMS receives the call request from the PLMN via an MGCF, an I-CSCF, and an S-CSCF.

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8. A method for terminating a call request in accordance with claim 1, wherein the step of receiving a call intended for the mobile unit at the IMS comprises receiving a call request from a SIP endpoint.

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9. A method for terminating a call request in accordance with claim 8, wherein the IMS receives the call request from the SIP endpoint via the IP multimedia network, I-CSCF, and S-CSCF.

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10. A method for terminating a call request in accordance with claim 8, wherein SIP endpoint is outside of the PLMN.

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11. A method for terminating a call request in accordance with claim 1, wherein the step of sending by the S-CSCF SIP messages comprises sending the SIP messages directly to the iMSC.

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12. A method for terminating a call request in accordance with claim 1, wherein the step of sending by the S-CSCF SIP messages comprises sending the SIP messages to the I-CSCF in the IMS.

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13. A method for terminating a call request in accordance with claim 12, wherein the I-CSCF forwards the SIP messages to the iMSC.

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14. A method for terminating a call request in accordance with claim 1, wherein the step of performing interworking between SIP call control procedures comprises mapping call states between SIP and an over-the-air call control protocol.

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15. A method for terminating a call request in
accordance with claim 1, wherein the step of performing
interworking between SIP call control procedures
comprises mapping messages between SIP and an over-the-
5 air call control protocol.

16. A method for terminating a call request in
accordance with claim 1, wherein the step of performing
interworking between SIP call control procedures
10 comprises mapping message parameters between SIP and an
over-the-air call control protocol.

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